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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,610	12/07/2001	Chae Gee Sung	10125-4105	7349

7590                    10/14/2003

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EXAMINER

BERRY, RENEE R

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 10/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. <b>10/020,610</b>	Applicant(s) <b>Sung</b>	
	Examiner <b>Renee Berry</b>	Art Unit <b>2818</b>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1)  Responsive to communication(s) filed on Jun 27, 2003
- 2a)  This action is FINAL.      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.
- 4)  Claim(s) 3, 4, and 6-9 is/are pending in the application.
- 4a) Of the above, claim(s) 6-9 is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 3 and 4 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12)  The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some\* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a)  The translation of the foreign language provisional application has been received.
- 15)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- 1)  Notice of References Cited (PTO-892)      4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)      5)  Notice of Informal Patent Application (PTO-152)
- 3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_      6)  Other: \_\_\_\_\_

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## DETAILED ACTION

### *Election/Restriction*

1. Applicant's election with traverse of Group I in Paper No. 5 is acknowledged.
2. Claims 6-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.  
Applicant timely traversed the restriction (election) requirement in Paper No. 5.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent no. 6,337,292 to Kim et al. in view of US patent no. 6,444,507 to Miyasaka.

In regards to claim 3, Kim teaches a method of producing a thin film transistor by preparing a plasma CVD apparatus including a radio-frequency electrode and a susceptor electrode disposed in opposed relation and installed in a film forming chamber; bringing a gas mixture having the same composition as the gas mixture into a plasma state under a greater radio-frequency electric field than the radio-frequency electric field, thereby forming a second gate

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insulating film on the first gate insulating film and forming a semiconductor active film on the second gate insulating film at column 13, lines 43-66 to column 14, lines 1-13, claims 1-4.

In regards to claim 4, Kim teaches a method of producing a thin film transistor by preparing a plasma CVD apparatus including a radio-frequency electrode and a susceptor electrode disposed in opposed relation and installed in a film forming chamber; bringing a gas mixture of silane gas into a plasma state under a desired radio-frequency electric field formed between the radio-frequency electrode and the susceptor electrode, and thereby forming a first gate insulating film on a gate electrode formed on a substrate at column 13, lines 43-66 to column 14, lines 1-13, claims 1-4.

However, Kim does not teach using an ammonia gas.

In regard to claim 3, Miyasaka teaches bringing a gas mixture of silane gas and ammonia gas into a plasma state under a desired radio-frequency electric field formed between the radio frequency electrode and the susceptor electrode, thereby forming a first gate insulating film on a gate electrode formed on a substrate at column 31, lines 25-41.

In regard to claim 4, Miyasaka teaches bringing a gas mixture, in which silane gas and ammonia gas are mixed at such a mixing ratio as containing the ammonia gas at a greater proportion relative to the silane gas than in a mixture gas, into a plasma state under a radio-frequency electric field having the same intensity as the radio-frequency electric field, thereby forming a second gate insulating film on the first gate insulating film and forming a semiconductor active film on the second gate insulaing film at column 31, lines 25-41.

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Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Kim to include bringing a gas mixture, in which silane gas and ammonia gas are mixed at such a mixing ratio as containing the ammonia gas at a greater proportion relative to the silane gas than in a mixture gas, since such a modification will prevent contamination, as well as, using ammonia as a art recognized substitue for nitrogen, hydrogen or mixture thereof, as described in column 3, lines 24-35 and column 45, lines 40-47 of Miyasaka.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. R. Berry whose telephone number is (703) 305-4544.

  
RRB

  
HOAI HO  
PRIMARY EXAMINER

September 21, 2003